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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,563	12/14/2001	Philip D. Floyd	98706R	1245

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EXAMINER

BOUTSIKARIS, LEONIDAS

ART UNIT PAPER NUMBER

2872

DATE MAILED: 10/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,563

Applicant(s)

Floyd

Examiner

Leo Boutsikaris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Dec 14, 2001
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration
- 5) ☒ Claim(s) 1-20 is/are allowed.
- 6) ☒ Claim(s) 21-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other:

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DETAILED ACTION

Reissue Applications

1. The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.
2. The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following:

The oath or declaration must identify at least one error being relied upon as a basis for the reissue and that it is indeed an appropriate error for reissue (37 CFR 1.175(a)(1)). If new claims are presented, their differences from the original claims must be pointed out. See MPEP 1414. Here, the new, broader, claims 21-36 must be compared with original claims 1-20, concerning their scope with enough specificity to satisfy the statutory rule as set forth *supra*.

3. Claims 21-36 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

4. The amendment filed on 12/14/2001 proposes amendments to the claims of US Patent No. 6,002,507 that do not comply with 37 CFR 1.173(b), which sets forth the manner of making amendments in reissue applications. All new claims must be underlined. A supplemental paper correctly amending the reissue application is required.

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Claim Objections

4. Claim 24 is objected to because of the following informalities: The said claim cites “the at least one MEMS component” in line 1, which lacks of antecedent basis. It is suggested that the above is replaced with “the at least first one MEMS component”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 21, 27, 30-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Motamedi.

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Regarding claims 21, 27, 31, 33, Motamedi discloses a MEMS device (Figs. 1 and 6a-6h, and lines 53-54 and 61-63, col. 4, and 4-5, col. 8) wherein a single crystal silicon (SCS) layer 120 is provided, which subsequently is patterned to form a MEMS component in the form of micro-mirror 124 (Fig. 6a), followed by deposition of polysilicon layers 132 on top of the patterned SCS (Fig. 6e). Furthermore, the SCS layer comprises a SOI wafer including a SCS layer attached to an insulator layer 122 (lines 34-38, col. 9).

Regarding claim 30, the polysilicon layer comprises a bimorph actuator component (lines 15-22, col. 4).

Regarding claims 32, 34, the polysilicon component e.g., the actuator 18 acts as a hinge connected to the movable mirror 25.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motamedi in view of Kiang.

Motamedi discloses all the limitations of the above claim except for specifying that the polysilicon layer is deposited by chemical vapor deposition (CVD), and more specifically low

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pressure chemical vapor deposition (LPCVD). Kiang in disclosing a MEMS mirror system, he teaches that polysilicon may be deposited on silicon substrate using LPCVD (lines 59-60, col. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use LPCVD for depositing the polysilicon layer onto the SCS layer in the Motamedi's MEMS device, since the use of LPCVD for depositing polysilicon is known in the microelectronics art, as evidenced by the above reference.

Allowable Subject Matter

9. Claims 22-24, 28-29, 35-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, provided the rejection, set forth in paragraph 3 of the present Office Action, is overcome.

10. Claims 1-20 are allowed.

11. Claims 1-20, 22-24, 28-29, 35-36 are allowed over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, regarding claims 1-20 an integrated laser beam scanning structure, and a method for making such a structure, wherein a semiconductor light emitter is mounted in the recess of a wafer on which a deflecting and a torsional mirror are fashioned, and a light beam emitted from the light source is deflected by the deflecting mirror onto the torsional mirror, regarding claims 22-24, 28-29, a MEMS formation method wherein the second MEMS component is formed by patterning the polysilicon, and regarding claims 35-36, a

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MEMS device further comprising a semiconductor emitter mounted in the recess and oriented to emit a light beam at the single crystal component, as set forth in the claimed combination.

The pertinent art of Swartz (US 5,625,483) discloses an integrated laser scanning device wherein a laser light source disposed on a silicon substrate emits light that is reflected from micromirrors also disposed on the substrate (Figs. 3 and 5).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is (703) 306-5730.

Leo Boutsikaris, Ph.D.


October 8, 2002



Cassandra Spyrou
Supervisory Patent Examiner
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